

prepared by dissolving; and

a controller for simultaneously operating the dissolution unit and at least one of the gas discharge control unit and the liquid discharge control unit.

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14. (Twice Amended) The preparation apparatus according to claim 13, further comprising a preparation tank in which the chemical solution is prepared, and wherein the dissolution unit includes a gas supply unit for forming bubbles of the chemical gas in the preparation tank to dissolve the chemical gas in the liquid.

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17. (Amended) A chemical solution preparation apparatus comprising:  
a gas supply line for supplying a chemical gas;  
a liquid supply line for supplying a liquid, which is one of pure water or a mixture having a predetermined composition;

a dissolution unit for dissolving the chemical gas in the liquid, wherein the dissolution unit includes a preparation tank in which the chemical solution is prepared and a gas supply unit for forming bubbles of the chemical gas in the preparation tank to dissolve the chemical gas in the liquid; and

at least either one of a gas discharge control unit for discharging an adjusted amount of the chemical gas that was not dissolved in the liquid and a liquid discharge control unit for discharging a predetermined amount of the chemical solution, wherein one of the gas discharge control unit and the liquid discharge control unit is operated at substantially the same time as the dissolution unit;

a cooling unit for cooling the liquid in the preparation tank, wherein the cooling unit includes a pump for circulating the chemical solution between the preparation tank and a second pipe and a cooling element connected to the second pipe.

18. (Amended) A chemical solution preparation apparatus comprising:

a gas supply line for supplying a chemical gas;

32 a liquid supply line for supplying a liquid, which is one of pure water or a mixture having a predetermined composition;

a dissolution unit for dissolving the chemical gas to the liquid, wherein the dissolution unit includes a preparation tank in which the chemical solution is prepared and a gas supply unit for forming bubbles of the chemical gas in the preparation tank to dissolve the chemical gas in the liquid; and

8001 at least either one of a gas discharge control unit for discharging an adjusted amount of the chemical gas that was not dissolved in the liquid and a liquid discharge control unit for discharging a predetermined amount of the chemical solution, wherein one of the gas discharge control unit and the liquid discharge control unit is operated at substantially the same time as the dissolution unit;

a cooling unit for cooling the liquid in the preparation tank, wherein the cooling unit includes a cooling element connected to the preparation tank and a pump for circulating the chemical solution between the preparation tank and the cooling element.

19. (Amended) A chemical solution preparation apparatus comprising:

a gas supply line for supplying a chemical gas;

a liquid supply line for supplying a liquid, which is one of pure water or a mixture having a predetermined composition;

a dissolution unit for dissolving the chemical gas in the liquid, wherein the dissolution unit includes a preparation tank in which the chemical solution is prepared and a gas supply unit for forming bubbles of the chemical gas in the preparation tank to dissolve the chemical gas in the liquid; and

at least either one of a gas discharge control unit for discharging an adjusted amount of the chemical gas that was not dissolved in the liquid and a liquid discharge control unit for discharging a predetermined amount of the chemical solution, wherein one of the gas discharge control unit and the liquid discharge control unit is operated at substantially the same time as the dissolution unit;

a cooling unit for cooling the liquid in the preparation tank; and

a gas cylinder containing liquefied chemical gas, wherein the cooling unit includes a heat exchanger for exchanging heat between the gas cylinder and the preparation tank.

24. (Twice Amended) A chemical solution preparation apparatus comprising:

a gas supply line for supplying a chemical gas;

a liquid supply line for supplying a liquid, which is one of pure water or a mixture having a predetermined composition;

a dissolution unit for dissolving the chemical gas in the liquid; and

at least either one of a gas discharge control unit for discharging an adjusted

amount of the chemical gas that was not dissolved in the liquid and a liquid discharge control unit for discharging the predetermined amount of the chemical solution, which is prepared by dissolving, wherein one of the gas discharge control unit and the liquid discharge control unit is operated at substantially the same time as the dissolution unit;

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a concentration measuring device for measuring the concentration of the chemical solution, wherein the concentration measuring device includes at least one of the viscosity meter, a specific gravity meter, an ultrasonic wave velocity meter, and a specific conductance meter; and

a concentration adjusting device for adjusting the concentration of the chemical solution in accordance with the measured result of the concentration measuring device, wherein the concentration adjusting device includes a controller for calculating the concentration of the chemical solution from the measured result of the concentration measuring device and controlling the amount of the chemical gas supplied to the dissolution unit from the gas supply line in accordance with the calculated concentration.

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29. (Twice Amended) A chemical solution preparation apparatus comprising:

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a gas supply line for supplying a chemical gas;

a liquid supply line for supplying a liquid;

a dissolution unit for dissolving the chemical gas in the liquid to prepare a chemical solution and cooling the chemical solution during the preparation; and

a gas discharge control unit for discharging an adjusted amount of the chemical gas that was not dissolved in the dissolution unit, and

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a controller for simultaneously operating the dissolution unit and at least one of the gas discharge control unit and the liquid discharge control unit.

32. (Amended) A chemical solution preparation apparatus comprising:  
a gas supply line for supplying a chemical gas;  
a liquid supply line for supplying a liquid;  
a dissolution unit for dissolving the chemical gas in the liquid to prepare a chemical solution and cooling the chemical solution during the preparation; and  
a gas collection unit connected to the dissolution unit and a facility for fabricating electronic devices, wherein the gas collection unit collects chemical gas from used chemical solution disposed of by the fabrication facility, and supplies the collected chemical gas to the dissolution unit

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